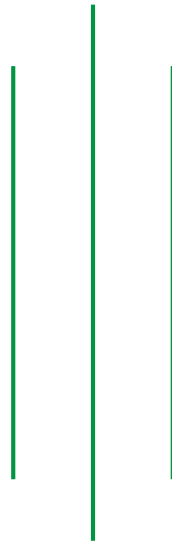


**Syllabus for Licensing Examination of  
Master in Optometry/Master of Optometry/  
Master of Clinical Optometry/M.Sc. in  
Optometry/M.Phil in Optometry  
2021**



**Nepal Health Professional Council**

Bansbari, Kathmandu

## Table of Content

S.N.	Name of course	Marks
1.	Advanced Ocular Diagnostics and investigation	10%
2.	Ocular diseases and ocular pharmacology	15%
3.	Research Methodology and biostatistics	5%
4.	Contact Lenses	5%
5.	Refractive Surgery,ocular prosthesis	5%
6.	Neuro-Optometry	5%
7.	Low vision / geriatric optometry	10%
8.	Applied Optics ,Refraction and Ophthalmic Dispensing	15%
9.	Binocular Vision Anomalies and VT	10%
10.	Sports Vision, Environmental and Occupational Optometry	5%
11.	Teaching Methodology	4%
12.	Entrepreneurship and Professional Code of Ethics	3%
13.	Community Eye Health	4%
14.	Pediatric optometry	4%
	Toatl	100%

## 1. Advanced Ocular Diagnostics and investigation

This section should cover related principle, methods and interpretations of optometric and ophthalmic diagnostic and investigative procedures. It should include

- a. Evaluation, investigations and management of eyelid disorders
- b. examination of eye: slit lamp techniques and fundoscopy
- c. Evaluation, investigation and management of ocular surface disease (dry eye, test for quantity and quality of tear)
- d. Recent trends in measurements of corneal parameters (topography, pachometry)
- e. Aberrometry , Keratometry , IOL power calculation , USG,
- f. Recent advancements in Ophthalmic imaging (photography, OCT)
- g. Visual field and gonioscopy
- h. Principles, procedure and interpretation of ERG
- i. Principles, procedure and interpretation of EOG,
- j. Principles, procedure and interpretation of VEP
- k. Assessment of optic nerve, radiological imaging of head and orbit

## 2. Ocular diseases and ocular pharmacology

Includes diagnosis, tests and management of:

- a. Thyroid ophthalmopathy and Infective keratitis
- b. keratoconus, corneal degeneration and dystrophy
- c. Conjunctivitis in adult and children
- d. Optometric and ophthalmic management of cataract
- e. Diagnosis , test , monitoring and treatment of glaucoma
- f. Recent trends in glaucoma diagnosis and medical therapy
- g. Congenital and inherited diseases of eyes
- h. Scleritis and Uveitis
- i. Diseases of Visual pathway
- j. Disease of retina and ONH
- k. Investigation in neurophthalmology
- l. Ocular injuries
- m. Principles of pharmacokinetics and pharmacodynamics
- n. Antimicrobial drugs (indication and mode of action), recent antimicrobial agents,
- o. Chemotherapeutic and Immunosuppressive drugs (indication and mode of action)
- p. Analgesic and Anti-inflammatory drugs (indication and mode of action)
- q. Miotics, antiglaucoma, Mydriatics and Cycloplegics drugs , recent advancements in application of cycloplegics drugs .

## 3. Research Methodology and biostatistics

- a. Formulation of research objectives
- b. Variables [independent and dependent]
- c. types of research designs
- d. Data collection techniques and tools
- e. Concept of probability, Basic terminology in probability
- f. Measurement of central tendency
- g. Sample and sampling procedures

- h. Correlation Analysis
- i. Specificity, Sensitivity, Odds ratio ,NPV, PPV calculation
- j. Analysis of covariance
- k. Recent trends in researches in vision sciences

#### 4. Contact Lenses

- a. Contact Lens Materials, Optics and Design
- b. Microbiology related to contact lens wear
- c. Toric soft Contact lens fitting
- d. Rigid Gas Permeable corneal lens fitting
- e. Wear modality and lens replacement
- f. Special types of Contact lenses indications and fitting procedures (scleral, rose-K,)
- g. Contact lens for myopia control and orthokeratology
- h. Contact lenses for post refractive surgery
- i. Contact lens Complications and management

#### 5. Refractive Surgery,ocular prosthesis

- a. Types and indication of Lasik , PRK, RK Smile , Phakic IOL
- b. Patient examination and work up for refractive surgery
- c. Patient selection for refractive surgery
- d. Complication f refractive surgery
- e. Recent advancements in corneal refractive surgeries
- f. Types of ocular prosthesis
- g. Fabrication of ocular prosthesis

#### 6. Neuro-Optometry

Diagnosis, , assessment , and management of :

- a. primary and secondary visual systems
- b. functional organization of visual system
- c. Introduction to spatial vision and Visual-spatial dysfunction
- d. Visual guidance and Eye hand Co-ordination
- e. Vestibular and visual oculo-motor system, Visual problems due to abnormal localization.
- f. Loss of Visual and non-visual memory, Spatial vision memory loss
- g. Non-traumatic Acquired Cerebral visual impairment
- h. traumatic brain injury clinical feature and optometric management
- i. Visual Problems in Neuro-Degenerative Diseases (MultipleSclerosis, Alzheimer's Disease, Parkinson's disease)
- j. Visual rehabilitation of acquired brain injuries
- k. Learning disabilities ,reading problems

#### 7. Low vision / geriatric optometry

- a. concept of low vision and visual impairment,ICD Classification
- b. Visual disorders and loss of visual function related to Visual impairment., Overallblur, Centralvs Peripheral field defect
- c. Evaluation of visual functions in a case with Visual impairment:VA,

- Refraction, VF, Contrast Sensitivity, Binocular Vision.
- d. Optical, anon optical and electronic Devices.
- e. Magnification Calculation for low vision device
- f. Special needs for assessment of pediatric cases
- g. Low vision enhancement in Corneal opacity and Glaucoma (advanced POAG)
- h. Low vision enhancement in Retinal degenerations (ARMD and Diabetic retinopathy, RP)
- i. Low vision enhancement in Albinism and Cone dystrophy

## 8. Refraction, Applied Optics and Ophthalmic Dispensing

- a. Lens materials and properties of lens ,Tints and coatings
- b. Types of Bifocals/Multifocals
- c. Fitting and dispensing of Bifocals and multifocals
- d. Types and properties of Progressive Addition Lenses
- e. Trouble shooting: Bifocals ,multifocals/ pals
- f. Frames: material ,types , special type frames
- g. Frame measurements and markings
- h. Specific measurements of lens (Minimum blank size/centration)
- i. Facial measurements and markings
- j. Measuring IPD, pupillometer
- k. Frame manipulation and repair (Troubleshooting)
- l. Pediatric ophthalmic Dispensing
- m. Optical dispensing in strabismus and anisometropia
- n. Ophthalmic dispensing in sports
- o. Geriatric spectacle dispensing
- p. Aphakic spectacle dispensing
- q. Recent advancements in spectacle dispensing (aspheric lenses , free form lenses, color vision enhancing lenses, night vision lenses)

## 9. Binocular Vision Anomalies and VT

- a. Test of accommodation: AA, accommodative facility, NRA, PRA, accommodative response
- b. Anomalies of accommodation: evaluation and management
- c. Test of vergence
- d. Anomalies of vergence: evaluation and management
- e. Sensory anomalies in binocular vision: assessment and management of - ARC, diplopia , suppression and amblyopia
- f. Management of horizontal and vertical tropias
- g. Paralytic and restrictive strabismus: evaluation management
- h. Vision therapy for fusional anomalies
- i. Vision therapy for accommodative anomalies
- j. Antisuppression vision therapies
- k. Vision therapy for amblyopia

## 10. Sports Vision and Occupational Optometry

- a. Screening in sport vision ,Visual Demand and Visual processing in sports
- b. Prescribing for the athlete, Enhancement of Visual Skills.
- c. Recent developments in Personal Protective Equipment (PPE) used for eye

- protection
- d. Workplace and Ocular Hazards, Ergonomics and Lighting Assessment
- e. Prescription based on Occupation.
- f. Eye health in industrial setting
- g. Visual Standards of Eye Protection Equipment
- h. Nutrition in Dry eye.
- i. Age Related macular Degeneration and nutrition

## 11. Teaching Methodology

- a. Theories of teaching: formal, descriptive and normative
- b. Types of instructional design: Objective based and Subjective based. Skill based, Competency based, Learning-style based, Model based
- c. Innovative and participatory strategies (Workshop/Seminars /Symposium)
- d. Micro-teaching and peer teaching-learning, Games, simulation, field trip and imagination, Critical thinking/ Brainstorming, Problem-Based Learning (PBL), Case study
- e. recent development in teaching methodologies .

## 12. Entrepreneurship and Professional Code of Ethics

- a. Motivation and communication
- b. Regulation of health professions in Nepal
- c. Right of optometrists in Nepal
- d. Theories in Medical Sociology

## 13. Community Eye Health

- a. Concept of -health, wellbeing, illness, sickness and disease
- b. Determinants of health
- c. Concept of preventive medicine, community medicine, clinical medicine, social medicine, community health
- d. Calculate epidemiological indices focusing on eye health
- e. Concept of community eye health, magnitude of blindness and visual impairment ( global/local)

## 14. Pediatric optometry

- a. Neonatal conjunctivitis
- b. Assessment of vision in children
- c. Refractive errors and spectacle correction in children
- d. Frame and lens selection for children
- e. management of Amblyopia,
- f. Pediatric cataracts and its management
- g. Ocular torticollis
- h. Leucokoria and Retinoblastoma
- i. Recent developments in pediatric optometry ( assessment , management)